

ABSTRACT

This invention describes a method of creating a magneto optical (MO) read only memory (ROM) storage medium using super-resolution during readout to overcome spot size limitations of the read laser. The new ROM is functionally similarly to current re-writable MO domain expansion systems such as magnetic amplifying magneto-optical systems (MAMMOS), but requires only one magnetic layer **30**. Nucleation sites **34** embedded in this magnetic layer **10** enable store data, taking the place of the fields created by the storage layer which aid nucleation in a typical MAMMOS. One method of inducing these nucleation sites is by controlling the substrate shape or texture. Since this can be accomplished in the stamping process, the new ROM could be produced at a cost comparable to current ROMs while benefiting from the higher readout densities possible with domain expansion media. As an added benefit, compatibility between this ROM compatible and its more advanced re-writable MAMMOS counterpart is also possible.